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☐ 1: **Chrna5** cholinergic receptor, nicotinic, alpha polypeptide 5 [*Rattus norvegicus*]

GeneID: 25102 Primary source: [RGD:2347](#)

updated 03-Mar-2006

Summary



Official Symbol: Chrna5 and **Name:** cholinergic receptor, nicotinic, alpha polypeptide 5 provided by [Rat Genome Database](#)

See related: [RATMAP:39091](#)

Gene type: protein coding

Gene name: Chrna5

Gene description: cholinergic receptor, nicotinic, alpha polypeptide 5

RefSeq status: Provisional

Organism: *Rattus norvegicus*

Lineage: *Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Sciurognathi; Muroidea; Muridae; Murinae; Rattus*

Summary: neuronal receptor and ion channel activated by acetylcholine; mediates release of catecholamines into bloodstream [RGD]

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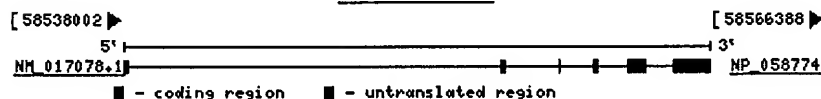
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Genomic regions, transcripts, and products



[RefSeq below](#)

NC_005107.2

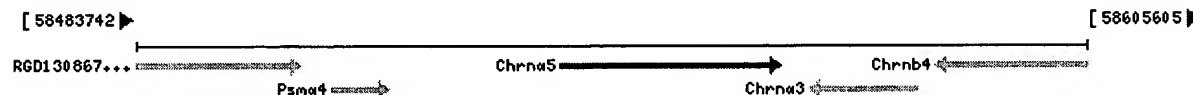


Genomic context

[See Chrna5 in MapViewer](#)



chromosome: 8; Location: 8q24



Bibliography

Gene References into Function (GeneRIF): [Submit](#)



[PubMed links](#)

GeneRIFs:

1. Increased expression of the alpha 5 nAChR subunit following spinal nerve

[PubMed](#)

ligation contributes to spinal cAMP response element-binding protein phosphorylation and the maintenance of mechanical allodynia.

2. Similar to other nAChR subunits, there is transient expression of alpha5 mRNA during cortical and hippocampal development. [PubMed](#)

3. Increased expression of the alpha 5 nicotinic receptor subunit may contribute to the mechanical hypersensitivity observed following spinal nerve ligation. [PubMed](#)

4. Immunocytochemistry revealed most chromaffin cells positive for alpha5 proteins. [PubMed](#)

General gene information

Markers

Chrna5(e-PCR) (Links: [UniSTS:261414](#))

Alternate names: J05231; RGD:2347

GeneOntology

Provided by [RGD](#)

Function

[GABA-A receptor activity](#)

[acetylcholine receptor activity](#)

[extracellular ligand-gated ion channel activity](#)

[nicotinic acetylcholine-activated cation-selective channel activity](#)

Evidence

IEA

IEA

IEA

IEA

Process

[ion transport](#)

IEA

[signal transduction](#)

IEA

[synaptic transmission](#)

IEA

[transport](#)

IEA

Component

[integral to membrane](#)

IEA

[membrane](#)

IEA

[nicotinic acetylcholine-gated receptor-channel complex](#)

IEA

Homology:

Human, Mouse

[Map Viewer](#)

General protein information

Names: cholinergic receptor, nicotinic, alpha polypeptide 5
acetylcholine receptor alpha 5; Acetylcholine receptor alpha 5

NCBI Reference Sequences (RefSeq)

mRNA Sequence [NM_017078](#)

Source Sequence [J05231](#)

Product [NP_058774](#) cholinergic receptor, nicotinic, alpha polypeptide 5

Conserved Domains (2) summary

[pfam02932: Neur_chan_memb; Neurotransmitter-gated ion-channel transmembrane region](#)

Location: 242 - 431 Blast Score: 422

[pfam02931: Neur_chan_LBD; Neurotransmitter-gated ion-channel ligand binding domain](#)

Location: 32 - 235 Blast Score: 592

Related Sequences



Nucleotide	Protein	Strain
mRNA AY574255	AAS90351	Sprague-Dawley
mRNA J05231	AAA74475	

Protein Accession LinksP20420 [GenPept](#) [UniProt](#)

Additional LinksUniGene [Rn.40125](#)Display  Show  Send to 

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Range: from to ☐ Reverse complemented strand Features: ☐ SNP ☒ CDD ☐

☐ 1: J05231. Reports Rat neuronal nico...[gi:950093]

[Links](#)

[Comment](#) [Features](#) [Sequence](#)

LOCUS RATNACHRR 2895 bp mRNA linear ROD 21-AUG-1995
DEFINITION Rat neuronal nicotinic acetylcholine receptor-related protein mRNA, complete cds.
ACCESSION J05231
VERSION J05231.1 GI:950093
KEYWORDS .
SOURCE Rattus norvegicus (Norway rat)
ORGANISM Rattus norvegicus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Sciurognathi; Muroidea; Muridae; Murinae; Rattus.
REFERENCE 1 (bases 1 to 2895)
AUTHORS Boulter, J., O'Shea-Greenfield, A., Duvoisin, R.M., Connolly, J.G., Wada, E., Jensen, A., Gardner, P.D., Ballivet, M., Deneris, E.S., McKinnon, D., Heinemann, S. and Patrick, J.
TITLE Alpha 3, alpha 5, and beta 4: three members of the rat neuronal nicotinic acetylcholine receptor-related gene family form a gene cluster
JOURNAL J. Biol. Chem. 265 (8), 4472-4482 (1990)
PUBMED 1689727
COMMENT On Aug 21, 1995 this sequence version replaced gi:205617.
Original source text: rat.
FEATURES
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